CH1712 CH1724

Automatic Battery Charger User's Guide

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ISO 9001
BSMI

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1. INTRODUCTION

AC Input Voltage

Voltage 110 / 220 VAC ±10% Single Phase (Adjustable)

Frequency 50 / 60Hz ± 5%

Equalize Charge Voltage

14.5VDC @ 12 VDC Charging Voltage

28.8VDC @ 24 VDC Charging Voltage

Float Charge Voltage

13.8VDC @ 12 VDC Charging Voltage

27.6VDC @ 24 VDC Charging Voltage

Rated Output Voltage

0.5 ADC ~ 20.0 ADC

Equalize Mode Voltage Adjustable Range

13.5VDC ~ 16.0VDC @ 12 VDC Charging Voltage

27.0VDC ~ 31.0VDC @ 24 VDC Charging Voltage

Float Mode Voltage Adjustable Range

13.0VDC ~ 14.5VDC @ 12 VDC Charging Voltage

25.8VDC ~ 28.0VDC @ 24 VDC Charging Voltage

Equalize Charging Time

6, 12, 24 Hours setting

Charge Mode

Equalize Charge Mode & Float Charge Mode

DC Voltage Regulation

< ± 1%

Efficiency 80% @ Full Load

Ripple Effect ±3%

Protection

Voltage Regulation, Current Limit

Short Circuit Protection

Spike protection

Reverse polarity connection of battery

Semiconductor type regulation

Operating Temperature

-10 ~ 40 °C

-20 ~ 40 °C

Dimensions 400mm L * 300mm W * 250mm H

Weight CH1712 24.6 Kg ±2%

CH1724 30.0 Kg ±2%

2. GENERAL DESCRIPTION

These units are works by a full wave accurate controlled thyristor and Inductive filters and smoothing capacitors to reduce the ripple amplitude of output. Thyristor regulation ensures low power dissipation and generously specified components provide for high operation efficiency.

3. FEATURES

3.1 Charges batteries with constant voltage and current.

3.2 Charge voltage / output current limit are adjustable.

3.3 Float / Equalize charge mode are available.

3.4 6/12/24 hr timer selection for Equalized charge mode.

3.5 Main input and DC output are fused by separated 1 pole MCCB on front panel.

3.6 Protection against shorted circuit and reverse polarity connection of battery.

3.7 Low ripple voltage (below ±1%).

3.8 High power efficiency (over 80%).

3.9 Separated analogue voltmeter and ammeter indication the charging voltage and current.

4. ELECTRICAL CHARACTERISTICS

4.1 Input Voltage : 1 phase 110V/220V ±10% 50/60 Hz optional.

4.2 Output voltage for Equalize Charging :

For 12V system 13.5 VDC ~ 16.0 VDC adjustable.

For 24V system 27.0 VDC ~ 31.0 VDC adjustable.

4.3 Output voltage for Float Charging :

For 12V system 13.0 VDC ~ 14.5 VDC adjustable.

For 24V system 25.8 VDC ~ 28.0 VDC adjustable.

4.4 Output current : 0 ~ 20 ADC adjustable.

4.5 Output Voltage Regulation : ±1%.

4.6 Power Efficiency : > 80% on full load.

4.7 Charge Mode : Float / Equalize available.

4.8 Protection :

- Output current limited.
- MCCB tripped in case of over current of main input.
- MCCB tripped in case of reverse polarity connection of battery.

5. INSTALLATION PLACE

5.1 Avoid humid places.

5.2 Avoid environment of corrosive gas.

5.3 Do not expose it to direct sun radiation or close a heating source.

5.4 Install it in a place that is easily accessible, adequate ventilation and without vibrations.

5.5 Batteries generate explosive hydrogen gas, even during normal operation.

5.6 People may injure by battery parts flying in an explosion.

5.7 They can explode under normal operating conditions.

5.8 Avoid Flames and Sparks Near Battery.

6. WIRING AND ADJUSTMENT

6.1 Ensure the output of the battery charger is accords with the voltage of battery.

6.2 Ensure the wiring of the battery charger is accords with main input voltage.

6.2.1 Main Voltage is 110VAC. (Figure 3)

- Main power feed in 4 and 5.
- Connect 6 and 7 with jumper wire.
- Connect 8 and 9 with jumper wire.

6.2.2 Main Voltage is 220VAC.

- Main power feed in 4 and 5.
- Connect 7 and 8 with jumper wire.
- Terminal 6 and 9 are null.

6.2.3 Connect main power.

- Turn power MCCB on.
- The power pilot LED and float charge LED should illuminated.
- Voltmeter should appear default value 13.8V (at 12V system) or 27.8V (at 24V system).

6.3 If procedure 6.2 is performed normal turn power MCCB off.

Connect the output of this unit to the post of battery carefully.

CAUTION

Terminal lug must properly and securely crimp onto wires.

Because of the high current being carried by these lugs.

An inadequate or improper crimp will eventually lead to overheating of the joint.

Failure will soon follow, often with severe damage spreading beyond the immediate crimp joint.

6.4 Turn power MCCB on again.

Adjust 10 to expected value.

NOTE

The value must refer to the battery user's guide.

Over charge current will cause batteries damaged and this is helpless to shorten charge time.

6.5 Factory default setting voltage are.

- CH1712 Equalize charge mode is 14.5VDC. Float charge mode is 13.8VDC.
- CH1724 Equalize charge mode is 28.8VDC. Float charge mode is 27.8VDC.
- Unless the target battery is very old do not change the default value.

6.6 Charge current is limited in the preset value anytime in spite of the target batteries was fully discharged.

The value will decrease accompanies the battery is charged. The value approach to zero represent the battery is nearly saturation.

6.7 Float charge mode is effective at initial power on.

- In case of the battery is extremely discharged or repeat charge is needed press button 6 the equalize charge mode is effective.
- Equalize charge mode will continue to 6/12/24 hours and back to float charge mode automatically to prevent battery overcharged. Factory default time is 6 hours. (Figure 2)
- Turn the power MCCB off is able to break equalize charge mode.

6.8 The timer of equalize charge mode is able to changed.

Remove the metal cover of this enclosure and jump the wire proper position can change the timer.

6.9 When measuring the output voltage in an open circuit, user need to parallel a 4.7KΩ~10KΩ (1W) resistor.

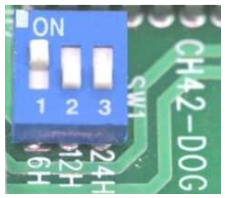


Figure 2

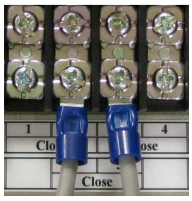
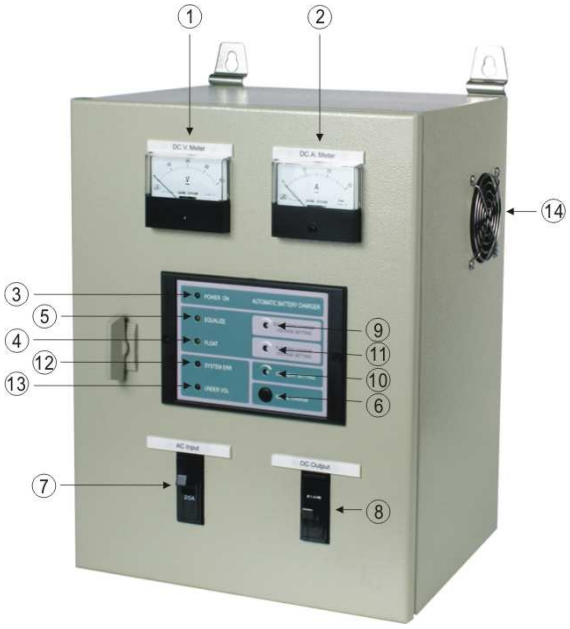


Figure 3

7. TROUBLESHOOTING



(1) DC Voltmeter for output.
(2) DC Ammeter for output.
(3) Power LED.
(4) Float mode LED.
(5) Equalize mode LED.
(6) Equalize mode setting button.
(7) Main power MCCB.
(8) Output MCCB.
(9) Adjust VR for equalize charge mode voltage.
(10) Adjust VR for output current limit.
(11) Adjust VR for float charge mode voltage.
(12) System failure indicator.
(13) Under voltage indicator.
(14) Fan

8. TROUBLESHOOTING

No output voltage	1. Check the voltage of the main AC source.
	2. Check whether main MCCB is tripped.
	3. Check whether the output terminal is feed to battery properly.
	4. Check whether output is shorted.
	5. Check whether reverse battery polarity is connected.
No charge current or the current is unable battery properly	1. Check whether the battery is saturated.
	2. Check whether the output terminals are feed to battery properly.
	3. Check whether the battery charger is accordant with target battery.
	4. Check whether if battery is decayed.
	5. Check whether the output MCCB is tripped.

※ If these steps above could not make the charger working still, Please contact with KUTAI.

※ Please accept our sincere apology if any modification in performance, specification or appearance is made without prior notice.